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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,097	02/27/2002	Robert S. Hirsch	107044-0015	6772

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EXAMINER	
BELL, BRUCE F	

ART UNIT	PAPER NUMBER
1746	

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,097	HIRSCH ET AL.	
	Examiner	Art Unit	
	Bruce F. Bell	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-32 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,2 and 8-32 is/are rejected.

7)☒ Claim(s) 3-7 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 27 February 2002 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 6/24/02, 10/9/02, 6/9/03 and 10/12/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 7, 18, 23-25, 32 are objected to because of the following informalities:

Claim 7 needs to have the trademark Kapton removed and the generic term used in its place.

Claim 18 needs to have the trademark Teflon AF removed and the generic term used in its place.

Claims 23-25 use the initials SMA which need to be changed to "shape memory alloy".

Claim 32, line 2; Change the word "thought" to "through".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. Claims 8-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8, 19 and 32 lack antecedent basis for "said anodic diffusion layer". The dependent limitation based on these claims are therefore also rejected.

Claim 19 is vague and indefinite with respect to the fuel container and delivery system being couple between the fuel source and the direct oxidation fuel cell. It is unclear how the fuel container and delivery system, which contains the fuel source, could be between the fuel source and the fuel cell. Dependent claims 20-31, therefore have the same vague and indefiniteness.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 8 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kindler (5992008).

Kindler disclose a direct feed methanol fuel cell having an outer container having an anode chamber 160, an anode 110, cathode 120 and a proton conductive membrane 130 and a cathode chamber 1120. Prior to use of the fuel cell, the anode chamber 160 is filled with an organic fuel and water mixture. The electrical load is applied between the anode and cathode where electro-oxidation of the fuel occurs at the cathode and other reactions occur at the anode, which give rise to a voltage difference between the two electrodes. Electrons generated by the electro-oxidation at the anode are conducted through external load 1130 and are captured at the cathode. The hydrogen ions or protons generated at the anode are transported directly across the membrane electrolyte to the cathode. A flow of current is sustained by a flow of ions through the cell and electrons through external load. See Figure 1 and col. 3, line 1-30.

Kindler anticipates the applicant's instant invention as set forth above. The examiner in charge of this application construes the anode chamber as being the anodic fuel receptor, since it is in intimate contact with the anode which anodes

are known in the art to be porous and with a catalytic surface for the purpose of diffusion of the materials.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Acker et al (6460733).

Acker et al disclose a fuel container and delivery assembly for use with a direct oxidation fuel cell system. See abstract. Fuel from the fuel delivery system 4 may be used to fill a reservoir 15 from which the fuel will be drawn. See col. 4, lines 35-38. The fuel delivery assembly 20 has an inner tank 22 disposed within an outer container 24. The inner tank contains pure methanol or an aqueous methanol solution. See col. 4, lines 50-67. A plenum 28 which is disposed between the outer container and the inner tank is filled with an additive such as a microencapsulated material, which dissolves during the introduction of the methanol solution. The microencapsulated material can be a foam material, which foam is released upon introduction of the methanol. See col. 5, lines 1-13. The inner tank is filled with the methanol solution and is sealed. The methanol

fuel is removed from the inner tank 22 by inserting a needle through the seal where it is directly feed into the direct methanol fuel cell. See col. 14-34.

The prior art of Acker et al anticipates the applicant's instant invention as set forth above.

Allowable Subject Matter

7. Claims 3-7, 9-11, 13-18 and 32 are allowable over the prior art of record.

8. Claims 3-7, 9-11, 13-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest a fuel delivery component in a fuel cartridge having a material such as felt or expanded polymer that can be saturated with fuel. The prior art also fails to teach and/or suggest a direct oxidation fuel cell having an anodic receptor of a conductive material that is a porous, high capillary material such as a foam or felted material to be used in drawing a fuel solution from a fuel source to the anode chamber. The prior art also fails to teach and/or suggest a refillable direct oxidation fuel cell system having the combination of the direct oxidation fuel cell system with anodic fuel receptor that will transport the fuel solution from the fuel source so that the fuel solution travels through the anode face as fuel is consumed at the anode and also has a fuel container and delivery assembly coupled to the fuel cell to transport the fuel solution as set forth above and additionally include a refueling port that communicates with the opening in the exterior casing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BFB
November 24, 2004

Bruce F. Bell
Primary Examiner
Art Unit 1746